ON THE COURSE

OF

COLLEGIATE EDUCATION,

ADAPTED TO THE CIRCUMSTANCES OF

BRITISH AMERICA.

THE

INAUGURAL DISCOURSE

OF THE

PRINCIPAL OF McGILL COLLEGE,

MONTREAL.

"Meditor instaurationem philosophiæ ejusmodi, quae nihil inanis aut abstracti habeat, quaque vitæ humanæ conditiones in melius provehat"

BACON.

MONTREAL: H. RAMSAY.
1855.

INAUGURAL DISCOURSE

OF

J. W. DAWSON, Esq., F. G. S.,

PRINCIPAL OF McGILL COLLEGE,

NOVEMBER 1855.

Mr. President, and Ladies and Gentlemen,—In entering on the duties to which I have been called in this place, it gives me much pleasure to have an opportunity of bringing before this large and intelligent assemblage a few thoughts relating to those great educational objects in which I trust we are all deeply interested—objects which, I believe, can in no way be better or more rapidly advanced, than by the public discussion of the principles on which they are based and the methods by which they are to be attained.

Before entering, however, on the proper subjects of this discourse, you will pardon me, as a stranger, for saying a few words on the circumstances in which I appear before you. Invited by the governing body of this University to occupy an important place in its management and in the work of instruction within its walls, I might, had I considered my own many deficiencies and the probable difficulties of the position, have entertained many doubts as to the propriety of entering on it. Believing, however, that in connection with this Institution, and in this the chief city of British North America, I should have the best opportunities of promoting the study of the subjects to which I have devoted myself, and at the same time of advancing the cause of education, I determined without hesitation to cast in my lot with yours; and I humbly trust that with the blessing of God on diligent effort, I may be able to carry out the objects of my appointment.

At a time when literary and scientific pursuits are so widely ramified, every one who aims to do anything well must have his special field of activity. Mine has been the study of nature, especially in those bye-gone aspects which it is the province of geology to investigate. My only other special qualification for my present position, depends on the circumstance that the wants of my native province have induced me to devote much time to inquiries and pursuits relating to popular education. I come to you, therefore, as a naturalist and an educationist, trusting that I may be enabled in these capacities to render myself useful, and asking for my youth and present inexperience in the affairs of this Institution, your kind indulgence, and for the work in which I shall be engaged, your zealous co-operation.

It is of course altogether unnecessary in addressing such an audience as the present, to dwell on the value of education in general. All who hear me will admit without hesitation that mental and moral culture are the only true foundations of the usefulness, prosperity, and greatness of individuals and of nations, and that no department of the social machine should be more jealously watched, more highly esteemed, or more liberally supported, than that which professes to train for a successful entrance on the business of life, those who will be the men and women of a few years hence. Nor need I insist on the truth that, in young and growing countries, where all is in a state of growth and transition, where boundless industrial resources are waiting to be drawn forth, where new social and political institutions are to be built up; and above all in a free country, where every one must think and act for himself in the most important concerns of life, and where any one, however humble his original position, may rise to places of the highest trust and influence, we should be content with nothing less than the highest possible education of the greatest possible number.

Such principles are now universally recognised in their bearing on Common School education, and they are not less applicable to the higher instruction with which we have now to do. In the higher institutions of learning, as well as in the lower, success must be attained by seeking as wide an utility as practicable, with as high a standard as possible of preliminary qualification and final culture. Nor are the

difficulties of securing these ends in the higher walks of education less than in the lower. Experience rather tends to show that they are greater and less easily overcome.

It is a great and common error to suppose that collegiate education has reached a point where it may safely remain stationary,—that its course has been unalterably fixed by authority and precedent. It is an equally serious and prevalent error, to take it for granted that it has attained its full extent of developement when its benefits are confined to a few professional men or persons of wealth and leisure. Such views cannot in the present state of the world lead to the highest prosperity of collegiate institutions, nor cause their humanising and elevating influences to be extensively felt on the mass of society. Happily in our day wider views are becoming prevalent, and no subject has been more extensively agitated in educational circles than University Reform. This reforming spirit has not only stamped its impress on all the newer colleges, but has made a powerful impression on the oldest universities on both sides of the Atlantic; and its tendency is to make the carefully elaborated learning of all the great academic centres become more fully than it has yet been, the principal moving power in the progress of practical science, of useful art, and of popular education. As illustrations I need only refer to the reforms now in progress in the great English Universities, to the recent establishment of a Technological Chair at Edinburgh, to the Scientific Schools of Harvard and Yale, to the special courses of practical science in the new London Colleges, and in the Queen's Colleges of Ireland, and to the similar improvements in Brown University, in Amherst College, and in the University of Toronto. The statutes of our own University contemplate similar improvements, and in its Medical School we already see an illustration of the splendid success which may attend their full introduction.

We may well ask, why should it not be so? In a period of great mental activity, when the world is straining after new truths and new utilities, and casting its old sloughs of prejudice and error, why should the Universities lag behind? Should they not rather move in the van, and annually send forth their students armed with the newest weapons to do

battle with the most recent errors, and prepared to explore the regions that lie beyond the circle of our present knowledge. These modern views of University reform, in truth, mark most fully and accurately the true place and utility of the higher education. The College is intended in the first place, to take the young man where the School leaves him, and develop its elementary training into the more matured mental habits of the man of business, the professional man, and the scholar. It finds its subjects school-boys; it aims to leave them men fitted to act creditably in the circumstances of their age and country, and to mark out and pursue those courses in life to which their tastes and powers incline them. In the second place, while it is the province of the University to preserve the literature of the past, it does so for the benefit of the present; and if it endeavours to gather into one focus the scattered sparks of light eliminated in different countries and by different minds, it does so that it may pour their accumulated radiance on the path of every young aspirant to honour and usefulness. In this view its stores of ancient and foreign learning, are not so much intended to form the character and limit the aims of the student, as to place him on a vantage ground whence he may mature a higher character, and if possible work out nobler results. In the third place, since the maintenance of collegiate institutions must practically depend on the acceptance of the great truth, that the progress of every society must be in proportion to the amount of enlightened mental activity that can be brought to bear on it, it follows that this practical collegiate instruction should not only leaven all who move in the higher walks of life and more learned professions, but should be extended as far as possible to all whose pursuits are in any way connected with science, with literature, or with refined taste.

The practical results to which such views lead with reference to the collegiate instruction suited to Canada, may be summed up as follows:

1st. Our college courses must not attempt to gain support by descending to the level of the schools; but must depend on that portion of the young men of our country who desire a higher and more extended course of instruction, and are willing to devote a few years to this object.

2nd. To merit success, our collegiate institutions must endeavour to provide a course of study embracing all the important subjects included in such courses in other countries, and these taught in such a manner as to establish the value of their degrees by the success of their graduates in active life.

3rd. To secure wide usefulness, collegiate institutions should be prepared to give the preparatory instruction demanded for the learned professions, and special courses of practical science suited to the circumstances of those who, while they desire instruction in some of the departments of college study, do not require to attend to all.

To the illustration of these points, especially in their connection with our institution, I design to devote the remainder of this discourse, even at the risk of dwelling on subjects that to some of my hearers may appear trite and common-place, but which yet are so important and so much misunderstood or misrepresented, that I think no apology necessary for adverting to them at some length.

First then it is essential to the character of college instruction, *that it shall succeed in time and excel in elevation the teaching of the best elementary schools.* The question of time involved in this statement, though sufficiently simple and intelligible, is in reality one of the greatest obstacles to the success of collegiate institutions in these Colonies. The demand for labour is so great, and the avenues of lucrative employment open to any one who has received a good school education are so numerous, that it is difficult to induce young men to devote several years to an expensive and tedious course of collegiate instruction, when the time and money so expended might materially advance their fortunes in life. In like manner those who do enter on a college course often arrive too young, and with a too slender amount of previous instruction, and have reason to complain in after life that they have been driven through their more advanced education while their minds where too immature fully to appreciate the studies in which they were engaged. I am aware that an influence of this kind, rooted in the social state of the country, cannot easily be reached by argument. It ought, however, to be taken into the account that the higher mental training is valuable for its own sake, and even if not directly

necessary for the particular business which the young man may have in view, may at a future time be indispensable to enable him to act creditably and usefully in other positions into which he may rise or be thrown by the varying fluctuations of life. No man can fail to find a liberal education a pleasant and useful companion through life, adding new charms to every innocent enjoyment, giving grace and dignity to the character, and making itself practically useful in a thousand unexpected ways. In the great majority of cases the ultimate loss from hurrying young men from the school into the work of life, is far greater than the immediate gain from the saving of the time that would be occupied by the collegiate course.

The higher education of the college does not, however, rise above the instruction of the school, merely because it follows it in time, but because its subjects are changing in their tastes and powers. The perceptive powers and memory very early attain perfection, but the reasoning faculties, the imagination, and the taste, are of slower growth, and the function of the school usually ceases just when they are beginning to manifest themselves in their strength. The higher course of instruction finds its true place in ministering to these growing powers: it leads the student into subjects for which he had neither taste nor ability; it stores his mind with new facts in departments of knowledge to which the teacher in the preparatory school could not usefully direct his attention; it leads him to the grouping of the individual items of his knowledge under the principles to which they are surbordinate, and thus to arrange and systematise his ideas, and rise to those general views which constitute science properly so called. It thus not only enlarges his views of nature, of art, and of his own constitution and relations; but gives him the mastery of his knowledge for practical purposes. It cultivates his powers of expression and of literary taste and criticism, and thus gives him readiness and self-reliance as a thinker, a speaker, and a writer. It opens up to the mind boundless fields of useful and pleasurable exertion; thus stimulating it to healthy activity, and causing it to cast aside the lower excitements which the less instructed youth deems manly, and to nerve itself for earnest labour, by self-denial and the hard tasking of its powers. It dispels narrow views and

prejudices, and liberalises the mind; while it arms it against the errors and impostures that on every side make their prey of the ignorant. It thus has, in relation to the growing powers of the student, an outward or objective utility, depending on the extent and practical value of the instruction which it affords, and a subjective utility depending on the high and harmonious developement which it gives to the powers of the soul itself; and both these require that it should be in its nature and scope superior to the instruction of the school, and that it should be communicated by the most eminent men who can be obtained in its several departments.

It may be said that this is what college education should be, rather than what it is. In good institutions of learning, however, it does rise to this position, and under the next branch of the subject we have to consider more in detail the means by which it does so.

II. To merit success, a collegiate institution *must endeavour to provide a course of study embracing all the important subjects included in such courses in the more improved Universities of other countries, and these taught in such a manner as to establish the value of its degrees by the subsequent success of its graduates in the active occupations required by our country.* When we enquire, what are the elements of the course of study adapted to these objects, we enter on one of the battle-grounds of university reform. One authority maintains that it is too much the practice to condemn young men to pore over Greek and Latin during the most precious years of life, when the wide field of modern literature and science lies open before them. Another urges the honoured example, the profound scholarship, the gigantic mental achievements of our ancestors, in defence of the course of instruction which they have handed down to us. Among those who hold the former view, there are many subordinate differences of opinion as to the extent and manner in which scientific studies should be introduced. Among those who hold the latter, there is no small controversy as to the relative preponderance of classical or mathematical learning.

On such a subject it becomes us to exercise a wise caution. We

should not blindly follow time honoured precedents, nor rashly venture on new and untried projects. It will be well for us here, with the wise spirit of eclecticism, which the common sense of the people of this country is daily applying to our political institutions, our school systems, and our industrial pursuits, to study experience abroad, and gather from every source that which approves itself as useful, and suited to our peculiar circumstances.

The more ancient English Universities were, in their origin, rather theological and monastic, than educational, in the modern sense of the term. As a writer in the *Quarterly Review* well expresses it: "the education of young men is one of their objects, but distinctly not the primary one—that is, *ad studendum et orandum*, to encourage the systematic study of the arts, first by way of preparation, and then of divinity, by persons enabled by the munificence of the founders to consecrate their time to deep reading." The first end of the University was thus rather to preserve learning, and to support those who devoted themselves to it, than to attempt its diffusion. The means adapted to secure such ends must clearly be different from those proper to the objects of Colleges in such countries as this.

In the revival of learning, when it began to emerge from the cloister, and to take its place in the active life of the world, the absence of indigenous literature obliged even the most progressive and original educationists to appeal rather to the learning of the past than to that of their own time. It was only by desinterring the rich treasures of classical antiquity, that literary capital could be obtained wherewith to commence the work of mental elevation. Nothing could, in these circumstances, be more natural and proper than that the best existing models of style and thought should be made the basis of liberal education. Mathematical science, itself a product of the mind of antiquity, at the same time claimed attention, and some of the earliest educational controversies turned on the rival claims of classical literature and mathematics, as means of mental training and educational progress.

Such controversies were, however, inseparably connected with the greater question of practical science, as contrasted with that barren philosophical spirit "meanly proud of its own unprofitableness," which

runs through the whole of classical antiquity and the middle ages. We greatly err, if we suppose sound practical views on this subject to be altogether of modern discovery, No one can better state the most advanced doctrines of University reformers than Bacon: "*Meditor instaurationem philosophiæ ejusmodi, quae nihil inanis aut abstracti habeat, quaque vitæ humanæ conditiones in melius provehat.*" We are still but carrying into practice this great principle of the Baconian philosophy, and the views of our most advanced educationists are but the echoes of that of the great expositor of the inductive method. In proof of this, I may quote the following general statements from the latest discourse of Dr. Wayland, so well known in connection with the improvement of the higher education on this continent:—

"First, every branch of study should be so taught as to accomplish both the results of which we have been speaking; that is, it should not only increase our knowledge, but also confer valuable discipline: and it should not only confer valuable discipline, but also increase our knowledge; and if it does not accomplish both of these results, there is either some defect in our mode of teaching, or the study is imperfectly adapted to the purposes of education.

"Secondly, there seems no good reason for claiming pre-eminence for one study over another, at least in the manner to which we have been accustomed. The studies merely disciplinary have valuable practical uses. To many pursuits they are important and to some indispensable. Let them, then, take their proper place in any system of good learning, and claim nothing more than to be judged of by their results. Let them not be the unmeaning shibboleth of a caste; but, standing on a level with all other intellectual pursuits, be valued exactly in proportion to their ability to increase the power and range and skill of the human mind, and to furnish it with that knowledge which shall most signally promote the well-being and happiness of humanity.

"And, thirdly, it would seem that our whole system of instruction requires an honest, thorough and candid revision. It has been for centuries the child of authority and precedent. If those before us made it what it is, by applying to it the resources of earnest and fearless thought, I can see no reason why we, by pursuing the same course,

might not improve it. God intended us for progress, and we counteract his design when we deify antiquity, and bow down and worship an opinion, not because it is either wise or true, but merely because it is ancient."

To the same effect are the following remarks of the enlightened and scientific nobleman, who presided over the last meeting of the British Association, in his introductory address, a production which should be studied by every friend of popular education :—

" And this, gentlemen, brings me to say that the advancement of science depends above all things, on securing for it a better and more acknowledged place in the education of the young. There are many signs that the time is coming when our wishes in this respect shall be fulfilled. They would be fulfilled, perhaps still more rapidly, but for the operation of obstructing causes, some of which we should do well to notice. How often do we find it assumed, that those who urge the claims of science are desirous of depreciating some one or more of the older and more sacred branches of education ! In respect to elementary schools we are generally opposed, as aiming at the displacement of religious teaching ; whilst in respect to higher schools and colleges, the cudgels are taken up in behalf of classical attainment. But surely no enlightened friend of the natural sciences would seek to challenge this imaginary competition. We cannot too earnestly disclaim the idea that the knowledge of physical laws can ever of itself form the ground-work of any active influence in morals or religion. Any such idea would only betray our ignorance of some of the deepest principles of our nature. But this does not affect the estimate which we may justly put on an early training in the principles of physical research. That estimate may not be the less a high one, because it does not assign to science what belongs to other things."

" There is one aspect in which we do not require to plead the cause of science as an element in education, and on that, therefore, I shall not dwell. I mean that in which certain sciences are recognised as the essential bases of professional training, as, for example, when the engineer is trained in the principles of mechanics and hydrostatics, or the physician in those of

chemistry. Of course, with every new application of the sciences to the arts of life this direct influence will extend. But what we desire, and ought to aim at, is something more. It is, that abstract science, without special reference to its departmental application, should be recognised as an essential element in every liberal education. We desire this on two grounds mainly; first, that it will contribute more than anything else to the further advancement of science itself; and, secondly, because we believe that it would be an instrument of vital benefit in the culture and strengthening of the mental powers."

As the question stands in our time, it really depends on the fact that the seeds of classical and mathematical knowledge so wisely sown by the revivers of learning, have borne, and are bearing, so vast and varied fruit, in the growth of modern literature and science, that the educator scarcely knows how to select from its overflowing riches. Hence, if we adopt as our guide the utilitarian maxim of Bacon, and define our utility to consist, first, in mental culture for its own sake, and, secondly, in the application of that culture to the material welfare of our race, the questions remain—Are these ends to be attained by a limited or wide course of study, by confining ourselves to the subjects which were originally employed to revive sound learning, or by having recourse largely to modern literature and science? and, to what extent can these be profitably combined in the limited time allowed to our course of study?

I shall endeavour to answer these questions by glancing individually at those branches of study which appear essential to a thorough and useful course of instruction, with some remarks on the relative degrees of prominence which should be assigned to them, and their place in our own University. I shall take them in their historical order, rather than in that in which they are taught.

First, then, on the distant verge of hoar antiquity, we have that old Semitic literature which may hold to that even of Greece, the language which Plato ascribes to the Egyptian Priests. "Ye Greeks still remain ever children: nowhere in Hellas is there an aged man. Your souls are ever youthful; you have in them no knowledge of antiquity, no ancient belief, no wisdom grown venerable by age." The first and

most important representative of this early oriental light, is the sacred literature of the Hebrew—that simplest, yet noblest of the tongues known to our schools, the vehicle of God's earliest communications of His will to man—a literature which sheds a brilliant beam of light along the whole path of civilization, widening and deepening in intensity as it reaches our time, and as a more careful and accurate criticism developes its hidden beauties, and makes known more fully its significance. I could wish that the critical study of the Divine literature of this venerable tongue, in all its varied literary and moral beauties, were more than it ever has been a popular, as well as professional, subject of collegiate instruction. Other early oriental literary remains might, I think, in connection with biblical literature, well claim the attention of the student, and should form important branches of our course of history. More especially is this true of the interesting historical remains of Egypt and Assyria, which bring before us in such vivid reality the oldest empires of the world, revealing the origins and elementary forms of the arts which we have been accustomed to admire in their secondary developement in Greece. Early Oriental literature has hitherto been confined principally to theological education. It is represented in McGill College by our chair of Hebrew and Oriental Literature, though, I am sorry to say, that as yet we have no class in this department; but I trust that this and other parts of our course, which might be made useful as preparatory studies for the Christian Ministry, may soon come into demand, in connection with the affiliation of theological seminaries to our University.

Descending to a more modern period, we have the noble literature and language of the Hellenic races, themselves learners from the East, and it would seem incapable of fully appreciating the sterner and more exalted religious ideas of the Semitic nations; but gifted with a vividness of imagination, a delicacy of taste, and acuteness of intellect, that have enabled them to transmit to us models in literature, art, and abstract science, that cannot be excelled. Certain grand prominent points in this literature are landmarks in the progress of the human mind. The greatest of epic poems, breathing at once the air of the east and west, bursts on us at the very threshold of Greek literature.

A little farther on the father of European history presents his enquiring and thoughtful countenance. Passing over a crowd of inimitable poets, dramatists and orators, many of whom still live as powers in the world of mind, we find both in the earlier and later periods of this literature, mathematicians, physicists, naturalists, and metaphysicians, whose influence is still strongly enstamped on our modern science. Finally, the extensive diffusion of the Greek tongue, after the conquests of Alexander, rendered it the fitting vehicle for the dissemination of the truths of the Gospel, a circumstance which, independently of all other considerations, must forever embalm this fine language in the learning of all Christian nations.

Roman literature represents the true middle age of the world, connecting forms of thought and of civilization which have altogether passed away, with those which under various modifications still subsist; and linking the language, the politics and the jurisprudence of the present inseparably with those of the past. Its study thus becomes, without taking into account the merely literary merits and beauties of the Latin authors, an object of undeniable importance to the professional man, the man of science, and the English scholar.

The large obligations that we owe to the literature of classical antiquity, as well as its present value, are thus sufficient to retain it as an important element in the higher education. The only danger is that the time of students may be so occupied and their minds so filled with such studies that they may go from our colleges armed with an antique panoply more fitted for the cases of a museum than to appear in the walks of actual life. Such results of the too exclusive devotion to ancient literature have undoubtedly given rise to just complaints, and in some instances have threatened to sweep away such studies altogether from the collegiate course; while there can be no question that the wide spread dissatisfaction arising from this cause, and from the apparent want of applicability of collegiate studies to the ordinary pursuits of life, has been largely influential in withdrawing public sympathy and support from the higher institutions of learning. In avoiding these evils, however, it is by no means necessary to rush into the other extreme. We cannot yet afford altogether to neglect classical

studies, even as purely practical branches of learning. No one who weighs aright their influence on his own mental growth can doubt this. Even those of us who have been prevented by the pressure of other duties and the attractions of other tastes from following out these studies into a matured scholarship, have to thank them for much of our command over our own language; for much breadth of view and cultivation of taste: for much insight into the springs of human thought and action, and even for some portion of our appreciation of that higher light which we enjoy, as compared with those ancient nations, which, with all their wisdom and civilization knew not the true God, and in consequence of that deficiency appear to our more enlarged views, even in their highest philosophy, but as children playing with the "golden sands of truth."

It is fortunately a well established principle that the power of verbal memory attains perfection much earlier than that of reasoning and generalization. Hence the lingual drudgery of early classical study is properly the work of the preparatory school, and the student should enter college prepared to relish the higher beauties of classical literature, to study them with a discriminating and philosophical spirit, and in some degree to mature his acquaintance with them without any exclusive devotion of his time and attention. Such, it is to be hoped, with the aid of our excellent High School, will be the course pursued in McGill College; and I think the public may rest assured that, under the careful and conscientious teaching of Dr. Davies, nothing really important in this department will be overlooked, while those members of the Faculty of Arts who have the charge of other departments, will take care that it attains no undue preeminence.

Turning to those departments of learning which, in their origin or full development, belong to our own time, we are bewildered by the crowd of studies which urge their claims, and it is here that the grand difficulty meets us of compressing a sufficiently thorough acquaintance with a sufficiently wide field of learning into the narrow limits of a College course. There are, however, certain subjects of sufficiently large importance to permit no hesitation as to their claims.

I may here merely refer to the modern European languages,

respecting the practical value of some at least of which it is necessary to say one word. The French and German languages are well represented in our institution by Mr. Markgraf, and within the last few days we have arranged to devote an additional hour to these subjects, so as more fully to subdivide the classes; an arrangement which I have no doubt the students will welcome as a boon.

But I would desire more particularly to notice, as deserving a high place in collegiate education, our own English tongue, which bids fair, like the Greek of old, to be the principal vehicle for the world-wide diffusion of the highest ideas in science, in politics and in religion; and which possesses models of lofty thought and of elegant expression equal to anything in classical antiquity, and more intimately connected with our better political institutions, our higher religious views, and our greater advancement in the arts of life. The philosophical study of its grammar and philological relations, the principles of style and composition, the critical examination of its highest literary productions, and the history of its literature, are of paramount importance to men in any profession or occupation that may at any time require them to speak in public, or to write their mother tongue.

Connected with the last mentioned studies in our course of instruction, are Logic, Mental and Moral Science, subjects which it appears to me are invaluable as a means of intellectual training; abounding in rich and suggestive speculations, and in nice and subtle trains of argument, turning the mind inward to study its mysterious essence and operations, leading the student on the one hand to those obscure regions in which many of the mightiest intellects have stumbled and fallen, and on the other to those clear and beautiful methods which are the working tools of modern philosophical enquiry, it forms, when properly viewed, at once a rich mine of mental culture, and an excellent preparation for every day business. It is true, that taken in the mass, no department of knowledge is more overloaded with worthless trifling or dangerous error; yet for this very reason it demands attention, and all the more labour on the part of the judicious teacher to keep himself abreast of the progress of investigation, and to seize those great leading points which are of real value. The two last depart-

ments belong, in the McGill College, to Dr. Leach, whose scholarly attainments and long connection with the Institution as the head of its Faculty of Arts, have established for him a high place in your respect and confidence, and I hope that the committal of this important department of English literature and mental philosophy to his care, will be regarded as a pledge that much is to be made of it in our course of instruction.

We must now, however, direct our attention to the Physical Sciences, based on mathematical truth and on experiment; sciences which, independently of their intrinsic charms and value, have in our day established a connection so intimate with every department of mechanical, manufacturing and agricultural art, that without them the material welfare of nations cannot be sustained, much less advanced. I fear that the practical busy world scarcely yet recognizes this dependance of art on abstract science. Art, it is true, has often taken the lead of science and "developed results before their causes were understood;" but this is sometimes rather apparent than real, and on the other hand inventions which have their orgin in scientific principles have become so rapidly diffused and so generally practised, that we are apt to forget the long series of investigations, the agitation of obscure scientific questions, and the indirect influences of even the doubts and difficulties of learned investigators, which have conspired to strike out the first hints of such practical applications. The more we enquire into this subject, the more will we be persuaded that the difference between the stationary condition of the arts in some ancient and modern semi-civilized nations, and their rapid progress among us, consists, to a great extent, in the more or less active pursuit and general diffusion of abstract science. Science has a double reward, first in the interest of its new facts and the ennobling general views to which it leads, and secondly, in its valuable and often unexpected applications. The long series of inquirers who from Galvani and Volta down to our time, questioned the occult and mysterious principle of galvanic electricity, were each rewarded by beautiful and striking discoveries, though they anticipated as little as the world that looked carelessly on their experiments, the result in that wonderful telegraphic communication, that now, in the

hands almost of children, is at once the latest and greatest marvel of practical science, and a potent aid to commerce and civilization. The scientific investigator and the academical professor may not be actual inventors; but they furnish the knowledge which leads to invention, and they train the leading minds of society to appreciate and bring it into successful operation. Hence the school of abstract science is really one of the great moving powers in the material prosperity of nations.

Under this head it is unnecessary to refer to the importance of Mathematics as a means of rigid mental discipline, of industrial art, and of scientific progress; nor is it necessary even to name all those important branches of Physics which come under the denomination of Natural Philosophy. I rejoice to say that Prof. Howe, who has earned so high a reputation as the head of the High School, will in the present month, without, however, withdrawing himself from the oversight of the School, in which he is to have the aid of an additional master, assume the chair of Mathematics and Natural Philosophy in the College, and will as soon as possible commence a course of lectures on Physics, illustrated by the excellent apparatus of the Institution, which has been for some time lying idle.

Chemistry, whose claims are equally great with those of any department of Natural Philosophy, has not hitherto formed a part of the undergraduate course in this Institution, but it is hoped that, before next session, arrangements will be made to make the course now delivered in connection with the Medical Faculty, accessible to the students of arts in one of the sessions of their course.

I come now to the great group of sciences included under the name of Natural History, and comprising all that we can learn by the observation and arrangement of the works of creation, both in their present aspects and in those which they have presented in past time. Natural History, as cultivated in our time, is young and of rapid growth, and is even now only taking the place which its value as a means of training the observing powers and of enlarging our conceptions of nature, and as an auxiliary to industrial and fine art, demands for it. Zoology and Botany have for some time been necessary parts of medical education

in many of the principal medical schools, and they will henceforth be accessible to students here. Geology and Mineralogy have been recognised by the governments of most civilized countries as important aids to material progress; and that they are so regarded here is witnessed by the admirable survey now in progress under my friend Mr. Logan, than whom no one would, I am sure, rejoice more in the diffusion of such a knowledge of his science as should render his labours more generally useful by making them better understood, and should increase the number of original enquirers. I hope before the close of the present month to commence a course of lectures on Natural History for the benefit of the students of the Medical Faculty and Faculty of Arts, and of such other persons as choose to avail themselves of it. I hope, also, in connection with this department, to form a Museum of Natural History, and shall be very thankful for any aid that may be given by individuals or public bodies toward such a collection.

Such is a very general view of the course of instruction adopted by us, and, as we believe, adapted to the present wants of this country, as a preparation for the learned professions and for general usefulness.

Can any parent doubt that such a course of instruction is worth its time and cost; or that when conjoined with the moral and religious training which it is the highest duty of every parent to impart, it will tend to enable his children to do credit to his name and memory.—Many who in this province have risen to wealth and consideration, have not enjoyed the benefits of a liberal education, yet these may be necessary to enable their children to retain the position which their fathers have acquired; and I can assure them that no man worthy of the name, will ever cease to bear in grateful remembrance the parent whose toil has realised and whose affection has bestowed the means of mental culture and of high and honourable usefulness. I was lately informed by a gentlmen connected with Harvard University, that a large proportion, probably a majority, of the principal business men, natives of Boston, are graduates of that university. Perhaps no other city could say as much, and I think in this fact we may trace at once a cause and indication of the high intellectual tone, the successful commercial and municipal management, and the admirable school system of a city which

claims the title of the Athens of America. May the time come when McGill College may, in this respect, be to Montreal what Harvard has been to Boston.

In connection with our general course, there is one very important topic to which I would here refer—the moral discipline of the University. I know it to be an objection urged against academical institutions, that they foster tastes anything but practical or useful, that their pupils often acquire frivolous tendencies, and habits adverse to business usefulness. Where numbers of young men are congregated at a distance from home, and under defective discipline, it must be admitted that such evils are too often produced. They originate mainly in the bad habits which some young men bring with them, and which they are allowed to communicate to others; and are aggravated by a want of earnest practical character on the part of instructors, and the consequent failure to excite enthusiastic devotion to the subjects of study. They are also promoted by the collection of students in college boarding houses, often little adapted for any efficient oversight of their manners or morals. By a more domestic system of boarding for pupils from a distance, by attention to the interests of the students, and by keeping them fully employed, we hope here to avoid these evils. One feature of this institution which may be regarded by some as of injurious influence in this respect, is its want of connection with any religious denomination. This, however, by no means implies that it shall be irreligious. On the contrary, it may be the object of careful attention on the part of the college authorities, that each student shall be placed in communication with the authorised religious teachers of the denomination with which he is connected, and shall attend their ministrations. I think I may pledge myself for all the gentlemen of the college faculties, that we shall be happy to fulfil this office in the case of any young men whose guardians may entrust us with it, as well as on every fit occasion to cultivate religious sentiments and respect for the great precepts and doctrines of christianity.

III. Our third general statement was that our University *should provide professional courses of study, and also selected or special courses, for those who, while they desire instruction in some departments, do not require to attend to all.*

In the first of these directions of useful exertion, McGill College already occupies a high and honorable place. Its Medical Faculty is second to none in America, and presents one of the noblest instances anywhere to be found, of the results which may be attained by the almost unaided exertions of able men thoroughly devoted to their work. Its announcement for the present Session shows a staff of eleven Professors, providing for all the important branches of Medical Science. It has a library of 2200 volumes, an extensive series of preparations, and excellent arrangements for hospital practice and dissections. Its pupils in last Session, numbered sixty-eight, derived from all parts of Canada; one-half of them being from the Upper Province, a proof not of the absence of competition, for there are other good schools, but of the pre-eminence of this. It has sent forth, since 1833, one hundred and fifty graduates, most of whom are engaged in practice in Canada, a few in Great Britain, and several in the army, to the commissions in which the graduates of this School are now eligible. The value of such a school consists not merely in its furnishing within the Province a thorough medical education, but in its power to adapt that education to the modifications of practice which in every country result from climatal conditions and endemic influences. Nothing in connection with education in this city, offers more just cause of pride, or of hope for the prosperity of our institution, than the success which has attended the labours of the Medical Faculty.

The nature of the preparatory training for the legal profession, practically limits the classes of our Law Faculty to the students within the city, but it is gratifying to know that the character of the instruction and the advantage which it affords in shortening the term of apprenticeship, have secured the attendance of a very respectable proportion of those students. I have much pleasure in stating that the Law Faculty will commence its operations in the present Session with an augmented staff of Instructors. It will number two Professors and two Lecturers, all men of high standing, and prepared to give instruction in Commercial, Civil, and Criminal Law, Jurisprudence and Legal Bibliography, Customary Law, and the Law of Real Estate. Under these new arrangements increased efficiency may be anticipated; and

we hope, in connection with a course of commercial instruction, to make at least one of the classes of the Law Faculty more extensively useful than to the merely legal students.

The department of Theology cannot be introduced into McGill College, but the advantages of the institution are available for all the preliminary training of a secular character that may be required; and by the provisions in its statutes for the affiliation of other institutions, it offers its assistance to any theological seminaries that may be erected in its vicinity.

In the direction of a school of practical science, all that has yet been done is to offer access to any of our lectures to all persons who may desire to attend them without entering themselves as regular students, and the provision of popular evening lectures for the benefit of the public. It is in great part to facilitate attendance on these means of instruction, that the classes have been temporarily removed from the original buildings of the University to the hall in which we are now assembled.

During the present winter it is intended to deliver a popular course, which will embrace the subjects of Natural History, Chemistry, Natural Philosophy and Civil Engineering, a combination of interesting and important subjects which should attract large audiences. It is also proposed to make the College Library, now containing a large number of valuable books, available as a public library of reference, by allowing any person to consult books on obtaining an order from any of the Governors or Professors.

These provisions, however, by no means exhaust the field of usefulness in this direction; and it is in contemplation, in the Session of next winter, to institute in connection with the Faculty of Arts certain special courses, bearing on some of the principal lines of industrial occupation, in the hope that in this way we may induce many young men who would otherwise receive none of the benefits of collegiate education to attend to certain selected classes. We propose, then, to attempt the establishment of the following Special Courses, each to extend over two years, and to entitle the student, on examination, to a certificate or diploma.

1. A course of Civil Engineering. This will embrace English Literature, Mathematics, Natural Philosophy, Chemistry, Geology and Mineralogy, Surveying, and Civil Engineering, including the construction of machinery. Such a course will be exceedingly serviceable, not only to all young men about to enter on the profession of Civil Engineering, but to many others more or less closely connected with the public works or manufactures of the Province. In this department of Engineering we hope to enlist the talents of one of your Civil Engineers whose name is favorably known wherever the public works of Canada have been heard of.

2. We also hope to commence a course of Commercial Education, including English Literature, History and Physical Geography, Mathematics, Chemistry, Natural Philosophy, Natural History, Modern Languages, Commercial Law; and, if suitable arrangements can be made, Lectures on Political Economy. It is scarcely necessary to point out the advantages to the young men of Canada, and of this city in particular, which must result from the successful establishment of such a course.

3. A farther extension of our Courses of Study may be effected in the direction of Agriculture. Throughout the Colonies attention is now being directed to those scientific principles of farming which have effected such wonders in Great Britain, and the introduction of which is imperatively demanded in all the older and more worn out districts of this country. I have no doubt that there are within reach of Montreal a number of enquiring and intelligent young farmers, who would gladly avail themselves of such a course during the winter months. It would include the following subjects:—English Literature, Natural History, Natural Philosophy, Surveying, Agricultural Chemistry, Practical Agriculture, and Management of Farm Animals.

These special courses will, I believe, rather build up than detract from our general under-graduate course, while they will certainly extend our usefulness, and give us increased claims on the support of the community; and thus tend ultimately to increase the demand for collegiate instruction, while in the meantime they will give an important impulse to practical science and the arts of industry.

I have now closed the view which I proposed to give of the course of collegiate instruction adapted to the circumstances of this country. I have endeavoured to give a plain statement of its true place in relation to the lower institutions of learning, of the elements which should enter into its course of study, and of the modes in which its influences may be extended and rendered practical; and I have endeavoured to apply these views to the condition of this University. I have not wilfully over-estimated the capabilities of this institution, nor promised anything that, with our present means, may not be accomplished. I trust I have shown that we are disposed to work for the benefit of the public, and to offer to it substantial advantages in return for such measure of countenance and support as it may afford to us; and I trust that our efforts may be so far successful that no Canadian may be able justly to complain that he is under the necessity of going beyond his native Province for an education that will enable him to take his place side by side with the best educated men of other countries.

The present seems to be a time highly favorable for enterprise in the higher education of Canada. With natural resources and political institutions inferior to those of no part of the world, British America appears to have entered on a course of industrial and mental development whose results it is hardly possible to predict. The storms of party animosity which once convulsed these Colonies have to a great extent subsided into an honorable rivalry in the promotion of the great interests of the country. The highest public employments are open to the ambition of all; great public works and mining and manufacturing enterprises are calling for skilled labor; agriculture is passing from its first rude soil-exhausting stage to the rank of a scientific art; increasing population and wealth are constantly opening new fields for professional labor; the extension and improvement of elementary education are at once requiring higher attainments on the part of those who aspire to public positions, and offering to them the support of a more enlightened public opinion. The demand for educated men must thus constantly increase, and it is by fostering good collegiate institutions that this demand can be supplied in the best way—by training among ourselves the minds that are required.

In conclusion allow me to congratulate the citizens of Montreal on the munificent endowment on which this institution is founded, and on the important circumstance that its management and its benefits are limited to no sect or party; but, as literature and science ever should be, are open to all. Let us hope that, standing on this broad basis, McGill College may ever exemplify the wise motto of your city arms, and that the utmost possible success and permanence may attend the united efforts of its friends in behalf of good learning.

M'GILL COLLEGE.

Visitor :

His Excellency, The Governor General.

Governors :

The Hon. Charles Dewey Day, President.
The Hon. James Ferrier.
The Hon. Peter McGill.
Thomas Brown Anderson, Esq.
David Davidson, Esq.
William Foster Coffin, Esq.
Hew Ramsay, Esq,
Benjamin Holmes, Esq.
Andrew Robertson, Esq.
Christopher Dunkin, Esq.

Principal :

John William Dawson, Esq., F. G. S.

Faculty of Law :

J. J. C. Abbott, Esq., B. C. L., Dean of the Faculty and Professor of Commercial and Criminal Law.

F. W. Torrance, Esq., M. A., Professor of Civil Law.

P. R. Lafrenaye, Esq., Lecturer on Jurisprudence and Legal Bibliography.

R. G. Laflamme, Esq., Lecturer on Customary Law and the Law of Real Estate.

The Lectures for the present Session commence on the 18th of November, and end on the 1st day of May. The Course extends over three Sessions, and entitles the Student, after a satisfactory examination, to the degree of Bachelor of Laws.

Faculty of Medicine.

A. F. Holmes, M. D., Professor of the Theory and Practice of Medicine, and Dean of the Faculty.

George W. Campbell, A. M., M. D., Professor of the Principles and Practice of Surgery.

Archibald Hall, M. D., Professor of Midwifery and the Diseases of Women and Children.

O. T. Bruneau, M. D., Professor of Anatomy.

James Crawford, M. D., Professor of Clinical Medicine.

William E. Scott, M. D., Professor of Clinical Surgery.

William Fraser, M. D., Professor of the Institutes of Medicine.

William Sutherland, M. D., Professor of Chemistry.

William Wright, M. D., Professor of Materia Medica and Pharmacy.

Robert P. Howard, M. D., Professor of Medical Jurisprudence.

D. C. McCallum, M. D., Demonstrator of Anatomy and Curator of the Museum.

The Sessions of the Medical Faculty commence on the first Monday of November, and end on the first day of May. The Course extends over four years, and entitles the Student, after a satisfactory examination, to the degree of Doctor of Medicine and Surgery.

Faculty of Arts:

Rev. Canon Leach, D. C. L., Vice-Principal and Dean of Faculty.

Rev. Benjamin Davies, Ph. Dr., Professor of Classical Literature.

Rev. Canon Leach, D. C. L., Professor of Moral Philosophy and Logic.

Henry Aspinwall Howe, Esq., M. A., Professor of Mathematics and Natural Philosophy.

Rev. A. De Sola, Professor of Hebrew and Oriental Literature.

J. W. Dawson. Esq., F. G. S., Professor of Natural History.

Charles F. A. Markgraf, Esq., Lecturer on French and German Literature.

The Sessions of the Faculty of Arts commence on the 10th of September, and end on the 1st day of May. The course extends over four years, and entitles the Student, after a satisfactory examination, to the degree of Bachelor of Arts.

High School Departmeat..

Professor H. A. Howe, M. A., Rector.
T. A. Gibson, Esq., M. A., First Assistant Master.
David Rodger, Esq., Second Assistant Master.
W. Bowman, Esq., Third Assistant Master.
J. D. Borthwick, Esq., Fourth Assistant Master.
Alex. Grant, Esq., Fifth Assistant Master.
C. F. A. Markgarf, Esq., French and German Master.
Jas. Duncan, Esq., Drawing Master.
John Follenus, Esq., Music Master.

SECRETARY, REGISTRAR, AND BURSAR.

William Smith Burrage, Esq.